



Dingle Brook Bridge Warrington

Client

Commission for New Towns

Contractor

Birse Construction

Consultant

WS Atkins

Works Completed

1997



Dingle Brook Bridge formed part of a single carriageway distributor road to serve the commission for New Towns housing development in Grappenhall Heys near Warrington. The bridge was designed to carry the road over a wooded ravine at an area known as Dingle Brook.

Reinforced Earth Company (RECo) offered an alternative solution to the conforming bid to the contractor, Birse Construction. It was proposed to install TechSpan® arches as the main spanning elements, with Reinforced Earth spandrel and wingwalls forming the structural infill support over the top of the arch backs. The cladding methodology was identical to that of concrete structures, employing wall ties to fix the bonded stonework to the Reinforced Earth walls.

RECo carried out full detailed design for the entire structure, with finite element analysis used to minimise the quantities of reinforcement and concrete used in fabrication of the TechSpan® arches.

The time saved on the original program by utilising TechSpan® and Reinforced Earth™ systems was over four weeks.

The project was a good example of an effective solution using a combination of Reinforced Earth products and methods. The bridge arrangement was put forward for, and won the 'Construction Industry Award for Innovation 1998' from the CONSTRUCT Structures Group, for both the prefabrication element and the recognition of the increasing importance of durability requirements within bridge structures.